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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,973	04/03/2001	Kenichiro Mori	684.3170	9679
5514	7590	08/24/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			MATHEWS, ALAN A	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2851	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/823,973

**Applicant(s)**

MORI, KENICHIRO

**Examiner**

Alan A. Mathews

**Art Unit**

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-26,29-31,34 and 37-41 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 26,31,34 and 39-41 is/are allowed.  
6) ☒ Claim(s) 18,22,24,25,29,30 and 38 is/are rejected.  
7) ☒ Claim(s) 19-21,23 and 37 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 18, 22, 24, 29, 30, and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsuji (U. S. Patent No. 6,392,742, cited on an 892 on September 18, 2002). Tsuji discloses in figure 1 and column 4, lines 34-65, a diffractive optical element 4 for forming a desired light intensity distribution upon a predetermined plane at element 7. Element 2 is an emission angle preserving optical element for emitting light with a constant emission angle. Column 6, lines 65-67, and column 7, lines 1-23, and figures 5A and 5B, discloses a switching control of the emission angle preserving optical element 2 (which is shown as 12a and 12b). Element 12a has a small emission angle and element 12b has a large emission angle. Column 7, lines 6-22 disclose placing two emission angle preserving optical elements 2 on a **turret**. This turret with two optical elements 2 would form an angular distribution transforming **unit** for transforming an angular distribution incident or to be incident on the diffractive optical element 4 into a plurality of predetermined distributions. Element 7 (fly's eye lens) is the multiple beam producing unit.

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Element 8 would be the light projecting element for superposing light rays from the multiple beam producing unit 7 on the surface of 9 to be illuminated. With respect to claim 22, optical elements 41 and 5 placed between diffractive optical element 4 and the multiple beam producing unit 7.

With respect to claim 24, column 6, lines 55-59, discloses placing diffractive elements on a turret, which is demountably inserting it into an optical path. With respect to claim 29, element 9 is the mask and element 8 is the light projecting element. Column 6, lines 60-64 discloses a projection lens (not shown) for projecting the pattern of the reticle 9 onto the wafer surface. With respect to claim 30, column 9, lines 38-40, and figure 8, disclose developing the wafer at step 17.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 18, 22, 24, 25, 29, 30, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese patent document 11-176721 (cited on Applicant's PTO-1449 filed March 17, 2003) in view of either Kudo (U. S. Patent No. 5,659,429) or the Japanese patent document 11-054426 (cited on Applicant's PTO-1449 filed March 17, 2003). The Japanese patent document 11-176721 discloses in figure 1 a diffractive optical element 4 for forming a desired light intensity distribution upon a predetermined plane at element 7. Element 2 is a projection angle storing optical element for projecting incident luminous flux at a fixed projection angle. Figures 5A and 5B discloses a switching control of the projection angle storing optical element 2 (which are shown as elements 12a and 12b). Elements 12a and 12b would transform an angular distribution incident on the diffractive optical element 4 into a plurality of predetermined distributions. Element 7 (fly's eye lens) is the multiple beam producing unit. Element 8 would be the light projecting element for superposing light rays from the multiple beam producing unit 7 onto the surface of 9 to be illuminated. With respect to claim 22, optical elements 41 and 5 are placed between diffractive optical element 4 and the multiple beam producing unit 7. Thus, the Japanese patent document 11-176721 discloses the invention except for specifically disclosing a unit for exchanging the lenses 12a and 12b. Kudo discloses the old and well known concept of having a lens changing unit 12. The Japanese patent document 11-054426 discloses in figure 1 a lens changing unit 11. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the Japanese patent document 11-176721 with a lens changing unit in view of either Kudo or the Japanese patent document 11-054426 for the purpose of improving the speed and efficiency of operation rather than changing the lenses by hand and thus improving the throughput of the exposure apparatus.

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With respect to claim 25, Kudo discloses a blocking member 51 on a turret, which would be demountably inserted into the optical path. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the Japanese patent document 11-176721 with a demountable blocking member in view of Kudo for the purpose of making the exposure apparatus more flexible and more variable to improve accuracy and thus make a better final product.

***Allowable Subject Matter***

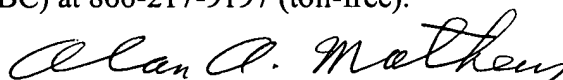
5. Claims 26, 31, 34, and 39-41 are allowed. Claims 19-21, 23, 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews  
Primary Examiner  
Art Unit 2851

AM